

Claims

What is claimed is:

- 5           1. A method of correcting for malfunctioning ink ejection elements in a printing system using a single pass over a recording medium, comprising:
- obtaining a standard printmask;
- identifying ink ejection elements which are malfunctioning;
- ascertaining ink ejection elements adjacent to the ejection elements which are
- 10 malfunctioning;
- selecting particular adjacent ink ejection elements from the adjacent ink ejection elements; and
- modifying the standard printmask by adjusting the amount of ink deposited by the selected adjacent ink ejection elements to create a modified printmask.
- 15           2.       The method of claim 1 wherein said obtaining includes obtaining data specifying a pixel grid of rows and columns.
3.       The method of claim 1 wherein said obtaining includes obtaining data specifying
- 20 the ink ejection element used to print a particular pixel location.
4.       The method of claim 1 wherein said obtaining includes obtaining the printmask from a printer driver.
- 25           5.       The method of claim 1 wherein said obtaining includes obtaining the printmask from a printer memory.
6.       The method of claim 1 wherein said identifying includes using an acoustical drop ejection detection to identify malfunctioning ink ejection elements.

7. The method of claim 1 wherein said identifying includes using an optical drop ejection detect to identify malfunctioning ink ejection elements.

5 8. The method of claim 7 wherein the optical drop detect includes passing a light beam from a light source to a light sensor through the path of ink droplets from the ink ejection chambers to the recording medium.

9. The method of claim 7 wherein the optical drop detect includes passing a light beam from a light source to the medium which is reflected to a light sensor thereby determining  
10 if a ink droplet has been deposited on the recording medium.

10. The method of claim 1 wherein said ascertaining the adjacent ink ejection elements are determined from the standard printmask .

15 11. The method of claim 1 wherein in said ascertaining the adjacent ink ejection elements are determined using a look-up table.

12. The method of claim 1 wherein in said ascertaining the adjacent ink ejection elements are determined from a printer memory.

20 13. The method of claim 1 wherein in said ascertaining the adjacent ink ejection elements are determined from a printer driver.

14. The method of claim 1 wherein said selecting includes selecting an adjacent ink  
25 ejection element in a row above the malfunctioning ink ejection element.

15. The method of claim 1 wherein said selecting includes selecting an adjacent ink ejection element in a row below the malfunctioning ink ejection element.

16. The method of claim 1 wherein said selecting includes selecting an adjacent ink ejection element in a row above and in a row below the malfunctioning ink ejection element.

5 17. The method of claim 1 wherein said modifying includes increasing the ink deposited by the selected adjacent ink ejection elements by the amount of ink that would be deposited by the ink ejection element that is malfunctioning.

10 18. The method of claim 1 wherein said modifying includes increasing the ink deposited by the selected adjacent ink ejection elements into empty pixels before depositing additional ink to pixels deposited with ink.

15 19. The method of claim 1 wherein said modifying includes not increasing the ink deposited by the selected adjacent ink ejection elements above a predetermined maximum ink level for a pixel.

20. The method of claim 1 further including ejecting ink drops onto the recording medium in a single pass over the recording medium in accordance with the modified printmask.